upon imagewise exposure to actinic radiation, and therefore comprise embodiments of the present invention. There has been no change in substance and no new matter is involved since the antecedent support for such amendment is found in the specification on page 10 beginning at line 34 through line 4 on page 11, on page 26 at lines 2 thorough 5, and on page 27 at lines 3 through 6. The fact that the element of Example 3 (formerly Comparative Example 1) did not maintain the color contrast after the final exposure only indicates a less preferred embodiment of the present invention.

Claims 1 and 20 have been amended by incorporating therein limitations contained in Claim 2 and Claims 23 and 24, respectively. Accordingly, Claims 2, 23 and 24 have been cancelled, and Claim 3 and Claims 25 and 30 have been amended to depend from Claims 1 and 20, respectively. New Claim 33 has been added to further claim the present printing plate invention. There has been no change in substance and no new matter is involved since the antecedent basis for such language is found in the specification on page 4, at lines 5 through 17, and on page 11 at lines 2 through 4. Also, new Claims 34 and 35 have been added for the purpose of provoking an interference with U.S. Patent No. 6,479,217 as requested below. Support for Claims 34 and 35 can be found in Examples 1 and 2 (page 23, line 22 to page 25, line 19) and in the specification as summarized in the attached Appendices 1 and 2.

The rejection of Claims 1 through 32 as being unpatentable over Fujikura et al. (U.S. 5,030,548), under 35 U.S.C. 103(a), is respectfully traversed. Claim 1 now defines a photopolymerizable element for use as a flexographic printing plate comprising a support and a photopolymerizable elastomeric layer on the support. The photopolymerizable layer comprises a binder, at least one monomer, a photoinitiator, an onium salt and a leuco dye, wherein the onium salt is selected from the group consisting of phosphonium salts, selenonium salts, triarylselenonium salts, iodonium salts, diaryliodonium salts, sulfonium salts, triarylsulphonium salts, dialkylphenacylsulphonium salts, triarylsulphoxonium salts, aryloxydiarylsulphoxonium salts, dialkylphenacylsulphoxonium salts, and combinations thereof. Claim 20 now recites a process for making a flexographic printing plate comprising providing a photosensitive element that includes a photpolymerizable elastomeric layer on a support. The photopolymerizable layer comprises a binder, at least one monomer, a photoinitiator, an onium salt and a leuco dye. The photopolymerizable layer is imagewise exposed to actinic radiation forming polymerized and unpolymerized portions in the layer, and also backflash exposed through the support to actinic radiation to form a floor. The imagewise exposed layer is then treated to remove the unpolymerized portions and form a relief surface having raised areas that contrast in color with the floor.

Fujikura et al. disclose a photopolymerizable composition useful for lithographic printing plates, resinous letterpress printing plates, and as photoresists or photomasks. The photopolymerizable composition includes a thermoplastic polymeric binder, a non-gaseous ethylenically unsaturated compound, a photopolymerization initiator system composed of 3

compounds, an organic halogen compound, and a leuco dye. In addition to the photopolymerization initiator system, conventionally known photopolymerization initiators, such as azo and diazo compounds, may be used in an amount of 0.01 to 5 weight % based on the solid components of the photopolymerizable composition (col. 6, l. 38-49). P-aminodiphenylamine diazaonium salt is disclosed as a suitable diazo compound. The leuco dyes are used in amounts of 0.01 to 10 weight % based on the solid components of the photopolymerizable composition (col. 10, l. 22-25). Thickness of a layer of the photopolymerizable composition is 5 to 100 micron (0.2 to 3.9 mils).

In the photopolymerizable element of the present invention, the onium salt and leuco dye in the photopolymerizable layer together photoinduce contrast and effectively differentiate exposed areas relative to unexposed (or underexposed) areas in an image. Upon exposure to actinic radiation, the onium salt provides an acid necessary for the leuco dye to change color without competing with the free radicals necessary for polymerization to occur. The onium salt causes the leuco dye to convert to its color form thereby photoinducing the color change. The photoinduced color change in the leuco dye by the onium salt occurs independent of the photoinduced polymerization reaction of the photoinitiator with the monomer or monomers.

Fujikura et al. teach only that the diazo compound is useful as a conventional *photo-polymerization initiator* (emphasis added) in combination with the 3-part photopolymerization initiator system. The diazo compound in the photopolymerizable composition of Fujikura et al. is optional, and not a requirement. Beyond Fujikura et al. mentioning that the leuco dye in combination with the organic halogen compound and the photopolymerization initiator system enhances the efficiency of the photopolymerization reaction, it is not clear what the function of the leuco dye is or even that the leuco dye changes to its color form during the reaction. In Fujikura et al., the photopolymerization system, together with the optional photopolymerization initiator may provide the free radicals necessary to convert the leuco dye to its color form, since the leuco dye must compete with the monomer/s for the free radicals in the photopolymerizable composition. However, when this approach is applied to elastomeric, relatively thick, photopolymerizable layers associated with flexographic printing elements, the leuco dye will not convert to its color form in the exposure time necessary to polymerize the exposed areas of the photopolymerizable layer. A layer of the photopolymerizable composition of Fujikura et al. is disclosed to be 0.2 to 3.9 mils thick. In the present invention, a layer of the photopolymerizable elastomeric layer for a flexographic printing element can be 20 to 250 mils or more in thickness, which is at least 5 times greater in thickness than that described by Fujikura et al.

Fujikura et al. do not teach or suggest the need for a compound to induce color change independent of the photoinduced polymerization reaction of the photoinitiator with the monomer or monomers. Other than the diazo salt compound as an optional

photopolymerization initiator, Fujikura et al. do not teach or suggest any of the onium salt compounds recited in Claim 1. It would not be obvious from the teaching of Fujikura et al. that onium salts selected from the group consisting of phosphonium salts, selenonium salts, triarylselenonium salts, iodonium salts, diaryliodonium salts, sulfonium salts, triarylsulphonium salts, dialkylphenacylsulphonium salts, triarylsulphoxonium salts, aryloxydiarylsulphoxonium salts, dialkylphenacylsulphoxonium salts, and combinations thereof, are useful to photoinduce color change in a leuco dye in a photopolymerizable element for use in a flexographic printing plate as recited in present Claim 1.

Fujikura et al. do not teach or suggest that their photopolymerizable composition imparts a contrast in color between raised areas of a relief surface and a floor of a flexographic printing plate. In their examples, the photopolymerizable composition is used only as a photoresist and no floor is formed. As a photoresist, the photopolymerizable composition is coated or laminated as a layer on a base board and imagwise exposed; the unexposed portions are dissolved away with a developing solution. The board may then be etched or plated. No floor is necessary for such use. Fujikura et al. disclose that the photopolymerizable composition can be used for letterpress plates, but does not teach or suggest a floor in the plate or how to accomplish such. Even if a floor for letterpress was known, Fujikura et al. neither teach nor suggest how to impart color contrast between the raised aeas and floor.

Furthermore, Fujikura et al. disclose only an imagewise exposure for the photopolymerizable composition, and thus Fujikura et al. do not teach or suggest that the photopolymerizable composition undergoes more than one exposure to actinic radiation. In the present process for making a flexographic printing plate, the photopolymerizable layer undergoes an imagewise exposure to actinic radiation forming polymerized portions and unpolymerized portions in the layer, and a backflash (blanket) exposure step to actinic radiation to form a floor. After a treating step to form a relief surface, a contrast in color exists between the raised areas of the relief surface and the floor.

Claim 33 is patentable over Fujikura et al. for reasons similar to those described above for Claim 20. Claim 33 is directed to a flexographic printing plate made from a photopolymerizable element where the plate has a relief surface with raised areas and a floor that contrasts in color with the raised areas. Since Fujikura et al. do not teach or suggest a flexographic printing plate having a relief surface with raised areas and a floor that contrasts in color with the raised areas, nor does Fujikura et al. show or suggest a photopolymerizable element comprising a photopolymerizable layer containing both a leuco dye and an onium salt as recited in Claim 1, it is respectfully submitted that the invention as now defined in Claims 1, 20 and 33 is not obvious to one skilled in the art, and that Claims 1, 20 and 33 are patentable over Fujikura et al. The allowance of Claims 1, 20 and 33 is therefore respectfully solicited.

Claims 3 through 19 and Claims 21, 22 and 25 through 32 are dependent for Claims 1 and Claim 20, respectively. Therefore Claims 3 through 19 and Claims 21, 22 and 25 through 32 incorporate the patentable novelty of Claim 1 and Claim 20, respectively, and the allowance of Claims 3 through 19 and Claims 21, 22 and 25 through 32 over Fujikura et al. appears to be in order for at least the reasons given with respect to Claim 1 and Claim 20.

The Examiner has cited Kondo et al. (U.S. 5,346,805) of interest as disclosing the state of the art having onium salt as an initiator with other compounds. Kondo et al. disclose a photopolymerizable composition which includes a polymerizable compound having at least one ethylenically unsaturated double bond and a photopolymerization initiator of an onium compound and an acridine derivative. A dye or pigment may be included in the composition, but no leuco dye is described. Applicant would like to clarify that in Kondo et al. the onium salt (with the acridine derivative) functions as a *photopolymerization* initiator, and not to initiate a color change in a leuco dye as claimed in the present invention.

INTERFERENCE

Applicant respectfully requests declaration of an interference in accordance with 37 CFR 1.607 as follows:

(a) Identifying the Patent

Applicant requests that an interference be declared between the above-identified application and U.S. Patent No. 6,479,217 ('217) filed February 22, 2001 and issued November 12, 2002, a copy of which is enclosed herewith. Newly added Claims 34 and 35 are directed to substantially the same invention, respectively, as Claims 1 and 24 of the '217 patent.

Applicant has complied with the requirement of 35 U.S.C. 135(b)(1) by presenting claims covering substantially the same invention as that claimed in the '217 patent prior to one year from the date the '217 patent was granted.

(b) Presenting a Proposed Count

Applicant presents in Appendix 3, attached hereto, the proposed Count. In compliance with 37 CFR 1.606, the proposed Count is broader than any claim in the '217 patent and Claims 20-22, 25-29, 34 and 35 in the present application.

(c) Identifying Claims Correponding to the Count

Applicant identifies all Claims 1 through 28 of the '217 patent and Claims 20-22, 25-29, 34 and 35 in the present application as corresponding to the Count and as being directed to substantially the same patentable invention.

Claim 34 of the present application corresponds to Claim 1 of the '217 patent and Claim 35 corresponds to Claim 24 of the '217 patent as detailed below. In the attached Appendix 4 Declaration of Dr. Adrian Lungu, dated June 17, 2003, Dr. Lungu further explains the difference in terms used in the present application which support Claims 34 and 35 and the terms used in Claims 1 and 24 of the '217 patent. The Declarant declares his belief that Examples 1 and 2 of the present specification describe the same patentable invention as that described in the '217 patent.

Regarding Claim 34

Claim 1 of the '217 patent is directed to "[a] method for producing a printing plate from a photosensitive recording element." Claim 34 is directed to " [a] process for making a printing plate" from a photosensitive element.

The preamble of Claim 34 corresponds to the preamble of Claim 1 in '217. Claim 34 and Claim 1 in '217 describe a procedure to make or produce a printing plate, in particular a flexographic printing plate from a photosensitive element. Examples 1 and 2 of the present application (page 23, line 23 – page 25, line 19) describe the process for making a flexographic printing plate from a photosensitive element as discussed in the Declaration of Dr. Lungu, item 3.

As shown in attached Reference 1, "making" is a synonym for "producing". The present application relates to a photosensitive element for use as a flexographic printing plate and a process for preparing the plate from the element, as described throughout the specification, particularly on page 4, lines 5-6 and 25-27. Attached Reference 2 defines "recording" as any process for preserving signals, sounds, data, or other information for future reference or reproduction, such as ... photographic recording. The photosensitive element is a photosensitive recording element because an image from a mask is formed in the photosensitive layer as described on page 17, lines 20 –25 and on page 20, lines 1-3, and in Examples 1 and 2, thereby recording the mask image in the layer.

The '217 patent relates to a method for producing printing plates using photosensitive recording elements. The printing plates are flexographic printing plates since '217 indicates that flexographic printing plates can be made according to the method of '217 (column 4, lines 35-38). Also in column 7, line 56 through column 8, line 6, the '217 patent provides a listing of conventional photosensitive recording elements that are useful in the production of flexographic printing plates. The '217 patent describes recording the mask image in the photosensitive recording layer in column 6, line 6 through column 7, line 10.

Step (a) in Claim 1 of the '217 patent recites "providing a photosensitive recording element containing a photopolymerizable recording layer having a front surface and a back surface wherein said recording layer comprises: a photopolymerizable monomer, a radical photoinitiator, a color photoinitiator, and a color former". (emphasis added)

Step (a) in the process of Claim 34 recites "providing a photosensitive element containing a photopolymerizable layer comprising at least one monomer, a photoinitiator, an onium salt and a leuco dye."

The step of providing a photosensitive element in Claim 34 corresponds to step (a) in Claim 1 of '217:

(1) With respect to "photopolymerizable recording layer", the photopolymerizable layer of Claim 34 is a photopolymerizable recording layer because an image from a mask is formed in the photopolymerizable layer as is described in the present specification on page 17, lines 20 –25, page 20, lines 1-3 and in Examples 1 and 2. Reference 2 defines "recording" as any process for preserving signals, sounds, data, or other information for future reference or reproduction, such as ... photographic recording. In the present invention the mask image is recorded in the photopolymerizable layer.

(2) With respect to "front surface", the photopolymerizable layer of Claim 34 includes a front surface since a front surface of the photopolymerizable layer corresponds to a side of the layer that is given an imagewise exposure. The side of the photopolymerizable layer given the imagewise exposure is described in the present specification as a surface of the photopolymerizable layer opposite a support (see page 17, lines 17-20). The surface of the photopolymerizable layer opposite the support may have one or more additional layers present (see page 14, lines 9-13), but the photopolymerizable layer still has a front surface which is imagewise exposed. In Examples 1 and 2 of the present specification, the surface of the photopolymerizable layer having the release layer corresponds to the front surface of the element. In Example 1 (page 24, lines 8-15) and Example 2 (page 25, line 37 – page 26, line 25), the coversheet of the element was removed and the element was exposed through a negative that was placed on the surface of the element opposite the support, i.e., the release layer. The release layer remains on the photopolymerizable layer after removal of the coversheet as is described on page 14, lines 25- 32 of the present specification. The surface of the photopolymerizable layer opposite the support which is imagewise exposed corresponds to the front surface of the photopolymerizable layer as discussed in the Declaration of Dr. Lungu, item 4.

(3) With respect to "back surface", the photopolymerizable layer includes a back surface since a back surface of the photopolymerizable layer corresponds to a surface of the layer that is given backflash exposure. Typically the photopolymerizable element includes a support for the photopolymerizable layer. The support side of the photopolymerizable layer is the rear surface. Backflash exposure is given through the support or to the back surface of the photopolymerizable layer as described in the present specification on page 4, lines 28

– 31 and page 19, lines 16 – 19, to form a floor. In Example 1 (page 24, lines 5-6) and Example 2 (page 24, line 38 – page 25, line 2), the element is backflashed exposed through the support. The surface of the photopolymerizable layer given the backflash exposure corresponds to the back surface of the photopolymerizable layer as discussed in the Declaration of Dr. Lungu, item 5.

(4) With respect to "photopolymerizable monomer", the at least one monomer of Claim 34 is a photopolymerizable monomer since the at least monomer is described in the present specification on page 6, lines 30-37 as being capable of addition *polymerization* (emphasis added). The at least one monomer can include ethylenically unsaturated compounds with at least one terminal ethylenic group. As discussed in the Declaration by Dr. Lungu, item 6, the at least one monomer capable of addition polymerization are photopolymerizable monomers since upon exposure to actinic radiation the initiator generates free-radicals that initiate radical chain polymerization of unsaturated monomer or monomers.

(5) With respect to "radical photoinitiator", the photoinitiator of Claim 34 is a radical photoinitiator since the photoinitiator is described in the present specification on page 7, lines 22-25 as any single compound or combination of compounds which is sensitive to actinic radiation, *generating free radicals which initiate polymerization of the monomer or monomers* (emphasis added) without excessive termination.

(6) With respect to "color photoinitiator", the onium salt of Claim 34 is a color photoinitiator since upon exposure to actinic radiation the onium salt initiates the change of color by the leuco dye. The onium salt is described in the present specification on page 8, line 12-18 as being sensitive to actinic radiation such that upon exposure to actinic radiation the onium salt generates an acid that reacts with the leuco dye. The reacted leuco dye changes to its color form and thus changes the color of the exposed portion of the photopolymerizable layer. In the '217 patent, the color photoinitiator is described as an agent capable of reacting with a leuco dye (or a reducible dye) upon excitation and inducing or generating color formation or color change in the leuco dye (or the reducible dye). A color photoinitiator is oxidizing agent. Onium salts are given as an example of useful color photoinitiatiors (column 8, line 7-13).

(7) With respect to "color former", the leuco dye of Claim 34 is a color former since the leuco dye changes to its color form after reaction with the acid of the onium salt. In the present specfication on page 8, line 12-18, and page 9, lines 19-23, the leuco dye is described as being colorless or only slightly colored prior to conversion to its color form and that the color form of the leuco dye should be in the visible region so that the change in color can be observed. The change in color by the leuco dye changes the color of the

exposed portion/s of the photopolymerizable layer. The '217 patent describes leucodyes and leucobases as suitable color formers on column 8, line 60 through column10, line 42.

Step (b) in Claim 1 of the '217 patent recites "exposing the back surface of said photopolymerizable recording layer to a first dose of actinic radiation thereby forming a cured back surface on said recording layer". (emphasis added)

Step (b) in the process of Claim 34 recites "backflash exposing the photopolymerizable layer to actinic radiation to form a floor".

Step (b) of backflash exposing in Claim 34 corresponds to step (b) in Claim 1 of '217:

(1) With respect to "exposing the back surface", backflash exposing of Claim 34 is the same as exposing the back surface of the photopolymerizable layer. Backflash exposure is a blanket exposure given through the support or to back surface of the photopolymerizable layer as described in the present specification on page 4, lines 28 – 31 and page 19, lines 16 – 19, to form a floor. In Example 1 (page 24, lines 5-6) and Example 2 (page 24, line 38 – page 25, line 2), the element was backflashed exposed through the support.

(2) With respect to "a first dose of actinic radiation", backflash exposing in Claim 34 occurs with a dose of actinic radiation. The dose of actinic radiation used to backflash expose the photopolymerizable layer is less than the dose of actinic radiation used for imagewise exposure, and can be measured by time or energy. The present application on page 11, lines 7- 19, describes that the exposure energy given during backflash (and post-exposure) is less than the threshold energy necessary to photoinduce color change by the leuco dye and the onium salt. Also, the time for backflash exposure is relatively short compared to the exposure time of the imagewise exposure as described on page 19, lines 27 – 23 and can range from a few seconds upto a few minutes on page 19, lines 25-26. Further, the backflash exposure is described on page 19, lines 30- 33, as sufficient to polymerize and form a floor in the photopolymerizable layer, but may "underexpose" the layer relative to the photoinduced color change reaction of the onium salt and the leuco dye. In Example 1 (page 24, lines 5-6) and Example 2 (page 24, line 38 – page 25, line 2), the element was backflashed exposed to a dose of actinic radiation, e.g., UV light, for less time and energy (in joules/cm^2) than was used for the imagewise exposure. Actinic radiation is described in the present application on page 18, line 21-22, as encompassing the ultraviolet and visible wavelength regions. And for main imagewise exposure, backflash exposure and post-exposure actinic radiation is between 310 and 400nm (page 10, line 28-30). The photopolymerizable layer is described as being sensitive to actinic radiation on page 7, lines 22-25. The '217

patent describes UV light as a suitable source for actinic radiation in column 6, lines 29-43. It should be understood that while the backflash exposure occurs with a first dose of actinic radiation, the term "first dose" does not imply an order to the exposure, but merely that the backflash exposure uses a different dose of actinic radiation than the imagewise exposure, and is delineated by a "first dose". The present specification on page 19, lines 22-23 describes that the backflash exposure can take place before, after, or during the other imaging steps. Thus, the backflash exposure to actinic radiation occurs with a first dose of actinic radiation.

(3) With respect to "a cured back surface", the floor which is formed by backflash exposure in Claim 34 is a cured back surface of the photopolymerizable layer. The backflash exposure is a blanket exposure to actinic radiation to create a layer of polymerized material, or a floor, on the photopolymerizable layer and to establish relief depth as described in the present application on page 19, lines 17-22. Exposure of a photopolymerizable layer to actinic radiation "cures" the layer as is clear from the discussion in a general book on flexography (Reference 3) a copy of which is attached with the relevant portions highlighted. The polymerized material forming the floor is cured, and the term "cured" means the same as "polymerized" as is discussed in the Declaration of Dr. Lungu, item 7.

Step (c) in Claim 1 of the '217 patent recites "imagewise exposing the front surface of said photopolymerizable recording layer to a second dose of actinic radiation thereby forming exposed and unexposed areas on the front surface of said recording layer wherein the exposed areas are cured by exposure to the actinic radiation" (emphasis added).

Step (c) in the process of Claim 34 recites "imagewise exposing the photopolymerizable layer to actinic radiation forming polymerized portions and unpolymerized portions in the layer."

The step of imagewise exposing in Claim 34 corresponds to the same step in Claim 1 of '217:

(1) With respect to "imagewise exposing," imagewise exposing in Claim 34 is the same as imagewise exposing the front surface of the photopolymerizable recording layer. As explained above, the front surface of the photopolymerizable layer is the surface that is imagewise exposed. Imagewise exposing is overall exposing through a mask which is disposed on or above a surface of the photopolymerizable layer opposite the support as described in the present application page 17, lines 17-20. The present invention allows for the presence of one or more additional layers on the surface of the photopolymerizable layer opposite the support. Even if there are one or more additional layers present, imagewise exposure still occurs to the front surface of the photopolymerizable layer. As described in the

present application on page 17, lines 20 –25, imagewise exposure occurs through the mask that includes opaque areas and "clear" areas that form the image. The opaque areas of the mask prevent the photopolymerizable material beneath from being exposed to the radiation and hence those areas of the photopolymerizable layer covered by the dark areas do not polymerize. The "clear" areas of the mask expose the photopolymerizable layer to actinic radiation and polymerize or crosslink. The image necessary for the imagewise exposure of the photopolymerizable layer can be generated by any method including conventional and digital methods, including inkjet application. An image-bearing negative is used in Examples 1 and 2. In the '217 patent, imagewise exposure of the photopolymerizable layer is described as placing an image-bearing process transparency over the photopolymerizable layer. The negative is designed to transmit actinic radiation through certain portions and to absorb or reflect actinic radiation at other portions so that the photopolymerizable layer underneath the negative is cured (column 6, lines 6-28).

(2) With respect to "a second dose of actinic radiation," the imagewise exposure occurs with a second dose of actinic radiation. The dose of actinic radiation used to imagewise expose the photopolymerizable layer is a different dose of actinic radiation than that used for the backflash exposure, and can be measured by time or energy. The present specification describes the time for the main imagwise exposure being longer than the time of the backflash exposure and the post-exposure on page 10, lines 28 – 35, and that imagewise exposure time ranges from a few to tens of minutes on page 18, line 19-20. Also, on page 11, lines 7 - 16, the specification describes the energy given during imagwise exposure as a threshold energy sufficient to photopolymerize and to photoinduce color change by the leuco dye and the onium salt. And because of the longer time and/or more energy associated with the imagewise exposure, color formation by the onium salt and the leuco dye will occur in the exposed areas so that the color contrast between exposed areas and the unexposed areas of the photopolymerizable layer can be seen. In Example 1 (page 24, lines 8-15) and Example 2 (page 25, line 3-10), the element was imagewise exposed to a dose of actinic radiation, e.g., UV light, for more time and energy (in joules/cm^2) than was used for the backflash exposure. It should be understood that the second dose of actinic radiation is generally not a different wavelength than the first dose of actinic radiation. The present application on page 10, lines 28 – 30, describes the photopolymerizable element being exposed to actinic radiation between 310 and 400 nm for each of the imagewise exposure, backflash exposure and post-exposure. Further, it should be understood that the term "second dose" does not imply an order to the exposure, but merely that the imagewise exposure uses a different dose of actinic radiation than the backflash exposure, and is

delineated by a "second dose". Thus, the imagewise exposure to actinic radiation occurs with a second dose of actinic radiation.

(3) With respect to "exposed and unexposed areas," the polymerized portions and unpolymerized portions of Claim 34 are the same as the exposed and unexposed areas, respectively. As is described in the present application on page 17, lines 17-25, the polymerized portions are exposed areas and the unpolymerized portions are unexposed areas. The mask includes opaque areas and "clear" areas that form the image. The opaque areas of the mask prevent the photopolymerizable material beneath from being exposed to the radiation, i.e., unexposed areas, and hence those areas of the photopolymerizable layer covered by the opaque areas do not polymerize, i.e., unpolymerized portions. The "clear areas" of the mask expose the photopolymerizable layer to actinic radiation, i.e., exposed areas, and hence those areas of the photopolymerizable layer polymerize, i.e., polymerized portions.

(4) With respect to "cured," the exposure to actinic radiation results in curing of the photopolymerizable material. Exposure of a photopolymerizable layer to actinic radiation "cures" the layer as is clear from the discussion in a general book on flexography (Reference 4), a copy of which is attached with the relevant portions highlighted. Exposed portions of the photopolymerizable layer are cured during imagewise exposure. As discussed in the attached Declaration of Dr. Lungu, item 8, one skilled the photopolymer art would understand that exposure of a photopolymer to actinic radiation, in particular ultraviolet light, results in polymerizing or hardening of the photopolymer. Hardening of the photopolymerizable material upon exposure is curing. Thus one of ordinary skill in the art of photopolymer technology knows that the terms "cured" and "polymerized", as used in the present context, are interchangeable.

Step (d) in Claim 1 of the '217 patent recites "removing the unexposed areas of the imagewise exposed recording layer thereby forming an image in relief".

Step (d) in the process of Claim 34 recites "treating the element of (c) to remove the unpolymerized portions and form a relief surface having raised areas."

The step of treating of Claim 34 corresponds to the step of removing in Claim 1 of '217:

(1) With respect to "removing," treating to remove the unpolymerized portions of Claim 34 corresponds to removing the unexposed portions of the '217 patent. The present specification on page 20, lines 1-6, describes the photosensensitive element being treated to remove unpolymerized areas in the photopolymerizable, and that the treating step removes at least the photopolymerizable layer in the areas which were not exposed to actinic radiation, i.e., the unexposed areas or uncured areas, of the

photopolymerizable layer. Treating includes "wet" development wherein the photopolymerizable layer is contacted with a suitable developer solution to washout unpolymerized areas, and also "dry" development wherein the photosensitive element is heated to a development temperature which cause the unpolymerized areas of the photopolymerizable layer to melt or soften or flow and is wicked away by contact with an absorbant material. The treating step is described in great detail in the present specification on page 20, line 1 through page 23, line 2. The '217 patent describes (column 6, line 63 through col. 7, line 10) removing unexposed areas of the exposed recording layer by washing or developing the plates with a suitable organic solvent or aqueous solvent which removes the non-photopolymerized or non-cured areas of the layer. Also, flexographic plate making systems that utilize dry (thermal) development may benefit from selective coloration.

(2) With respect to "forming an image in relief," form(ing) a relief surface having raised areas corresponds to forming an image in relief. After removal of the unexposed portions of the photopolymerizable layer, the relief constituting the exposed image and the floor remains (see page 20, lines 34-37). The exposed portions are raised areas above the floor of the relief surface. In Example 1 (page 24, lines 16-20) and Example 2 (page 25, line 11-15), the element was treated with a developing solution to remove the unexposed areas and form a relief printing plate.

The method of Claim 1 in the '217 patent recites that "the image and the cured back surface of the recording layer provide a visually detectable color contrast."

The process of Claim 34 recites that "the raised areas and the floor provide a color contrast."

The result of Claim 34 corresponds to the result of Claim 1 in '217:

(1) With respect to " a visually detectable color contrast," a color contrast between the raised areas and the floor corresponds to the visually detectable color contrast between the image and the cured back surface. It is clear from the present specification on page 4, lines 15-17 and on page 11, lines 2-4, that the relief image has a contrast in color between the raised (exposed or polymerized) areas of the relief and the floor of the plate. It would be understood by one skilled in the art from the present specifiation on page 4, lines 17-20, that the color contrast is visually detectable because of the usefulness that the color contrast image provides in mounting of the plate onto print cylinders. Also it is clear from the discussion on page 9, line 21-23, and page 11, line 36 through page 12, line 5, that the color contrast is visually detectable since the leuco dye is described as colorless or only slightly colored prior to conversion to its color form and the color form of the leuco dye is in the visible region of the spectrum so that the change in color can be

observed. In Example 1 (page 24, lines 20-24) and Example 2 (page 25, line 15- 19), the plate made from the photopolymerizable element of the present invention had a visually detectable color contrast. In Example 1, the exposed areas (raised image areas) were dark blue and the floor (valley areas) were pink-red. In Example 2, the floor was a blue color and the imaged areas were dark magenta color which provided good contrast between the raised image areas and the floor.

Regarding Claim 35

Claim 24 of the '217 patent is directed to "[a] method for producing a printing plate from a photosensitive recording element."

Claim 35 is directed to "[a] process for making a printing plate."

The preamble of Claim 35 corresponds to the preamble of Claim 24 in '217 as was discussed above and in the attached Declaration of Dr. Lungu, item 3.

Step (a) in Claim 24 of '217 recites "providing a photosensitive recording element containing a photopolymerizable recording layer having a front surface and a back surface wherein said recording layer comprises a photopolymerizable monomer, a radical photoinitiator, an oxidizing agent and a leuco dye color former." (emphasis added)

Step (a) in the process of Claim 35 recites "providing a photosensitive element containing a photopolymerizable layer comprising at least one monomer, a radical photoinitiator, an onium salt, and a leuco dye color former."

Step (a) in Claim 35 corresponds to step (a) in Claim 24 of '217:

(1) "Photosensitive recording element", "photopolymerizable recording layer", "front surface", "back surface", "photopolymerizable monomer", and "radical photoinitiator" were discussed above relative to claim 34 of the present application and Claim 1 of '217.

(2) With respect to "oxidizing agent", the onium salt is an oxidizing agent since the onium salt comprises a strongly oxidizing cation paired with a nonnucleophilic anion as discussed in the present applicationon page 8, lines 25-26 and in the Declaration of Dr. Lungu, item 9. The '217 patent describes onium salts as typical photosensitive oxidizing agents.

(3) With respect to "leuco dye color former" the leuco dye is described in the present application on page 8, lines 14-20, and page 9, lines 19-23, as changing to a color form after reaction with the onium salt, and thus the leuco dye is a leuco dye color former.

Step (b) in Claim 24 of the '217 patent recites "exposing the back surface of said photopolymerizable recording layer to a first dose of actinic radiation thereby forming a cured back surface on said recording layer."

Step (b) in the process of Claim 35 recites "backflash exposing the photopolymerizable layer to actinic radiation to form a floor."

The step of backflash exposing in Claim 35 corresponds to the step of exposing the back surface in Claim 24 of '217:

(1) "Exposing the back surface", "first dose", "actinic radiation", "cured back surface" were discussed above relative to Claim 34 of the present application and Claim 1 of '217.

Step (c) in Claim 24 of '217 recites "imagewise exposing the front surface of said photopolymerizable recording layer to a second dose of actinic radiation thereby forming exposed and unexposed areas on the front surface of said recording layer wherein the exposed areas are cured and colored by exposure to actinic radiation." (emphasis added)

Step (c) in Claim 35 recites "imagewise exposing the photopolymerizable layer to actinic radiation forming polymerized portions and unpolymerized portions in the layer, and coloring the polymerized portions."

The step of imagewise exposing in Claim 35 corresponds to the same step of Claim 24 in '217 as evidenced by:

(1) "Imagewise exposing", "second dose", "exposed and unexposed areas", and "cured" were all discussed above relative to Claim 34 of the present invention and Claim 1 of '217.

(2) With respect to "colored", the imagewise exposure polymerizes and colors the exposed areas in the photopolymerizable layer. The present specification on page 10, lines 34-37, discusses color formation occurring as a result of the main imagewise exposure so that the color contrast between the exposed areas and the unexposed areas can be seen. Also on page 11, lines 23- 27 and 34-36, the specification describes the change of color occurring in the areas exposed to acintinc radiation.

The method of Claim 24 in '217 recites that "the image is of a different color than the non-image areas of the front surface of said recording layer and the image is of a different color than the cured back surface of said recording layer." (emphasis added)

The method of Claim 35 recites that " the layer has a contrast in color between the polymerized portions and the unpolymerized portions, and has a contrast in color between the polymerized portions and the floor."

The result of Claim 35 corresponds to the same result of Claim 24 in '217:

(1) "The image and the cured back surface of the recording layer provide a color contrast" has been discussed above and is the same as the image being a different color than the cured back surface of the recording layer.

(2) With respect to "the image is of a different color than the non-image areas of the front surface of said recording layer", the layer having a contrast in color between the polymerized portions and the unpolymerized portions corresponds to the image being a different color than the non-image areas of '217.

Examples 1 (page 24, lines 12-15) and 2 (page 25, lines 7-10) of the present specification describe that after imagewise exposure a change in color was observed between the exposed areas and the unexposed areas of the photopolymer layer. In Example 1, the exposed areas (polymerized portions) were dark blue and the unexposed areas (unpolymerized portions) remained pink-red. In Example 2, the exposed areas were dark magenta and the unexposed areas remained pink-red.

(d) Applying the Terms of Claims 34 and 35 to the Specification

Support for terms recited in Claims 34 and 35 corresponding to the Count can be found in attached Appendices 1 and 2.

(e) Effective Filing Dates

In accordance with 37 CFR 1.608 where the effective filing date of the present application (April 20, 2001) is three months or less after the filing date of the '217 patent (February 22, 2001), Applicant hereby states that there is an evidential basis upon which Applicant believes he is entitled to a judgment relative to the patentee.

Applicant respectfully points out that the above-identified claims are directed to substantially the same invention as that claimed in the '217 patent. The subject matter of such claims has been examined and deemed allowable over Fujikura et al. Thus, Applicant respectfully requests that the proposed interference be declared for such claims and that the remaining claims be allowed.

Respectfully submitted,

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Attachments